

## Section 9

### Signs, Signals, and Barricades

This section establishes design specifications for safety signs, tags, and barricades used on sites administered by Reclamation. This section also covers standard hoisting signals and provisions about the use of signal persons.

#### 9.1 Requirements for Signs

9.1.1 **Application.** Signs described in this subsection must be visible at all times when work is in progress. Promptly remove or cover them when the hazard no longer exists.

9.1.2 **Standards.** In addition to the design specifications set forth in this subsection, the design and application of signs must conform to the latest edition of the following standards:

- a. American National Standards Institute (ANSI) Z535.1, *Safety Color Code*
- b. ANSI Z35.2, *Environmental and Facility Safety Signs*
- c. ANSI Z35.5, *Accident Prevention Tags (For Temporary Hazards)*
- d. ANSI C95.2, *Radio Frequency Radiation Hazard Warning Symbols*
- e. 29 Code of Federal Regulations (CFR) 1910.145, *Specifications for Accident Prevention Signs and Tags*
- f. U.S. Department of Transportation Federal Highway Administration, *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD)
- g. American Society of Mechanical Engineers (ASME) A13.1, *Scheme for the Identification of Piping Systems*

9.1.3 **Danger Signs.** Danger signs must conform to the following requirements:

- a. **Application.** Use danger signs only when the lives of employees or others are in danger.
- b. **Design.** As illustrated in figure 9-1, danger signs must have "DANGER" in white letters placed at the top of a rectangular safety sign with a red background. The safety alert symbol must precede "DANGER." The base of the symbol must be on the same horizontal line as the base of "DANGER." The safety alert symbol must be as high as or higher than "DANGER."

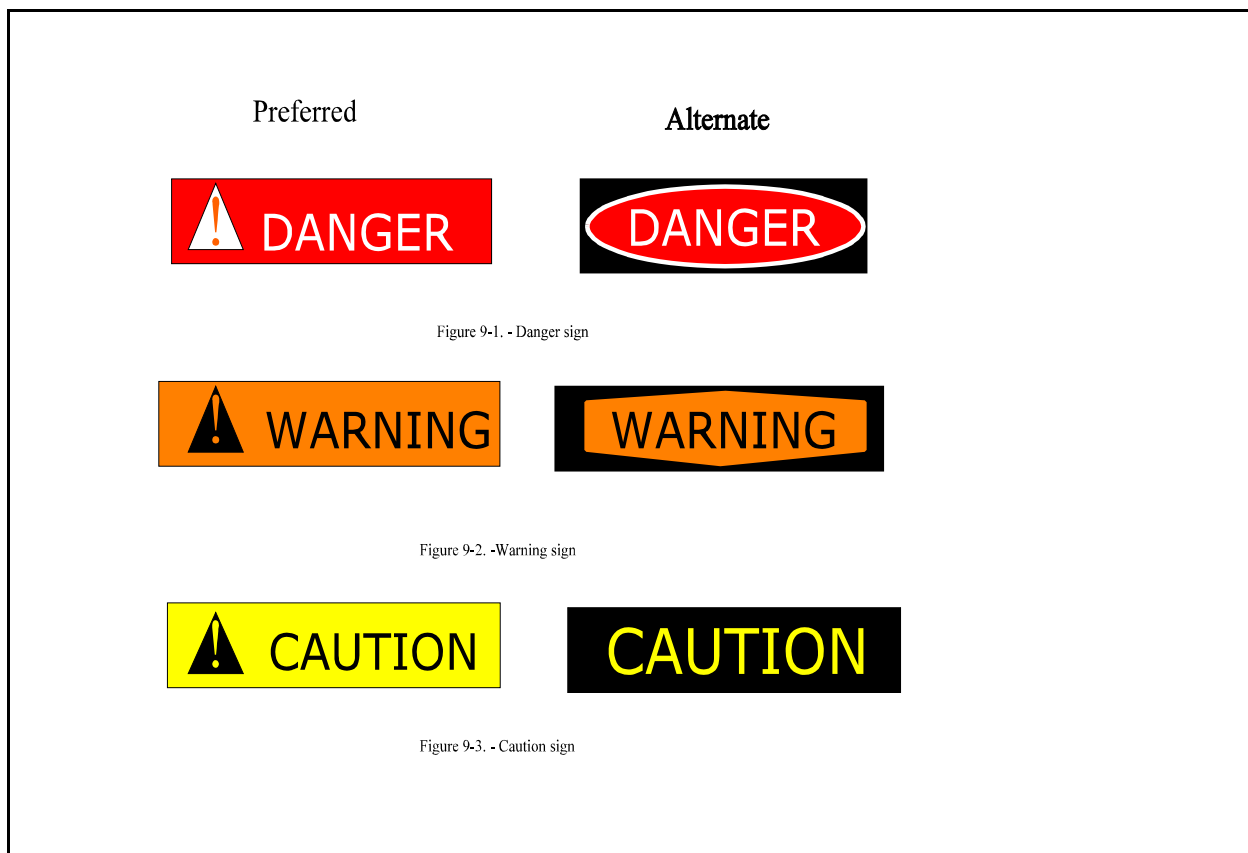


Figure 9-1.—Danger, warning, and caution signs.

c. **Alternative.** As an alternative, danger signs may have "DANGER" in white letters on a safety red oval background with a white border on a black rectangular field. This distinctive panel must appear in the uppermost portion of the sign. Do not use any other signal word or symbol within this distinctive shape and color arrangement. The message must be in black or red letters on a white background, or white letters on a black background. The symbol/pictorial panel, if used, must be square with a black, safety red, or black and safety red symbol on a white background.

9.1.4 **Warning Signs.** Warning signs must conform to the following requirements:

a. **Application.** Use warning signs to warn against a potential hazard that, if not avoided, may result in serious injury or death. Do not use warning signs for property damage hazards unless personal injury risk also exists.

b. **Design.** As illustrated in figure 9-1, warning signs must have "WARNING" placed at the top of the sign in black letters on a rectangular orange background. The safety alert

symbol must precede "WARNING." The base of the symbol must be on the same horizontal line as the base of "WARNING." The safety alert symbol must be as high as or higher than "WARNING."

c. **Alternative.** As an alternative, warning signs may have "WARNING" in black letters within a safety orange truncated diamond of a black rectangular background. Locate this distinctive panel in the uppermost portion of the sign. See figure 9-1. Do not use any other word or symbol within this distinctive shape or color arrangement. The message panel must be in black letters on a white background or white letters on a black background. The message may, as an alternative, be black letters on a safety orange background.

**9.1.5 Caution Signs.** Caution signs must conform to the following requirements:

a. **Application.** Use caution signs to warn against a potential hazard that, if not avoided, may result in minor or moderate injury. Caution signs may also alert against unsafe practices that may cause property damage.

b. **Design.** As illustrated in figure 9-1, caution signs must have "CAUTION" placed at the top of the sign in black letters on a rectangular yellow background. The safety alert symbol must precede "CAUTION" if the hazard is a potential personal injury hazard. The base of the symbol must be on the same horizontal line as the base of "CAUTION." The safety alert symbol must be as high as or higher than "CAUTION."

c. **Alternative.** As an alternative, caution signs may have "CAUTION" in safety yellow letters within a black rectangular background located in the uppermost portion of the sign. See figure 9-1. Do not use any other signal word or symbol with this distinctive color or signal shape arrangement. Caution signs used to indicate accidents of property damage only do not include the safety alert symbol. These signs have "CAUTION" in black letters on a rectangular safety yellow background. The message panel must be in black letters on a white background or white letters on a black background. As an alternative, the message may be black letters on a safety yellow background.

**9.1.6 Exit and Fire Protection Signs.** Identify fire exits, fire protection equipment, and physical hazards in accordance with ANSI Z35.1, "Safety Color Code," or NFPA No. 101, "Life Safety Code."

**9.1.7 Instructional Safety Signs.** Signs intended for general safety instructions or information must have a green upper panel and white lower section. White letters on the green background must convey the principal message. Additional information must appear in safety green or black letters on the white background.

**9.1.8 Directional Arrow Sign Panels.** The directional arrow symbol must be white on a black or colored background on a rectangular field. The symbol must appear in the uppermost portion of the visual alerting device if it appears by itself or with general safety or fire safety signs. When using these directional arrows along with DANGER, WARNING, CAUTION, or NOTICE signs, the arrow must be in the lower sign panel. The color of the arrows must be the same arrangement as the message or symbol described above. The design of the directional arrows must be in accordance with ANSI Z35.2.

**9.1.9 Pipe Labels.** Label pipes that carry hazardous materials to identify their contents in accordance with ASME 13.1, "Scheme for the Identification of Piping Systems."

**9.1.10 Traffic Signs and Barricades.** Traffic signs and barricades must conform to the following requirements.

a. **Design and Use.** Traffic signs and barricades erected in areas under Reclamation jurisdiction must conform to the current U.S. Department Of Transportation Federal Highway Administration MUTCD. Signs and barricades erected on highways and roads must comply with MUTCD requirements or the highway or street department having jurisdiction, whichever are the more stringent. Do not use cable as a gate or road closure device. Single and double pole pipe gates are permitted if they comply with the standards set forth in MUTCD, section 3C-4, END OF ROADWAY provisions. Each gate must have at least two double-sided, 18-inch by 18-inch, red reflective diamond panels mounted on and spaced equally across the gate, as described in MUTCD section 3C-3. Mount the diamond panels 36 to 48 inches above the ground. When closed, the reflective panels must be visible from both directions of travel.

Equip gate ends with reflective material to identify the open end of the gate. The gates must be designed to remain either fully opened or fully closed.

b. **Installation and Removal.** Erect appropriate traffic control signs and devices immediately before need and promptly remove them when no longer required.

c. **Visibility.** Keep signs and barricades clean and legible. Reflectorize or illuminate, as appropriate, any signs and barricades used at night. Signs and barricades must be visible at all times. Do not obscure them with parked equipment or other objects.

d. **Traffic Controls.** When signs and barricades do not provide adequate protection, flag persons or other appropriate traffic controls must be provided.

## 9.2 Accident Prevention Tags

Accident prevention tags are intended to warn employees and others of an existing hazard. They are intended for temporary use to warn of equipment under repair, defective tools, or defective equipment. Accident prevention tags must conform to the current ANSI Z35.5, "Accident Prevention Tags (For Temporary Hazards)."

## 9.3 Requirements for Radiation Hazard Signs

**9.3.1 Lasers.** Laser warning signs and symbols must conform to the design specifications in the current issue of ANSI Z35.2, "Environmental and Facility Safety Signs," and ANSI Z136.1, "Safe Use of Lasers."

**9.3.2 Ionizing Radiation.** Ionizing radiation warning signs and symbols must conform to the design specifications in the current issue of ANSI Z35.2, "Environmental and Facility Safety Signs."

**9.3.3 Radio Frequencies.** Signs warning of harmful radio frequencies must display the standard warning symbol, as described in the current issue of ANSI C95.2, "Radio Frequency Radiation Hazard Warning Symbol."

## 9.4 Traffic Control Signals

**9.4.1 Requirement.** Flag persons directing traffic must use the signals and procedures contained in the current issue of the U.S. Department of Transportation Federal Highway Administration, MUTCD. It can be accessed on the Internet at the following website address: <http://mutcd.fhwa.dot.gov/kno-millennium.htm>

**9.4.2 Flag Persons.** Use only employees who are trained, qualified, and/or State certified as flag persons. Flag persons controlling traffic must wear high visibility fluorescent apparel.

## 9.5 Barrier Tape

**9.5.1 Requirement.** When using barrier tape to identify a temporary hazardous location, the employee in charge of the area must mark the tape with an accident prevention tag showing his/her name and phone extension.

**9.5.2 Red Plastic Tape.** You may use red plastic tape to warn of dangerous locations. Red plastic tape will mean STOP, DANGER, or DO NOT ENTER. Instruct personnel working inside of the taped area on the requirements of the JHA for the taped area. The employee in

charge of the area must provide a proper briefing and approval for other personnel requiring entry. Personnel must not cross over or under a red barrier tape without proper authorization.

**9.5.3 Yellow Plastic Tape.** You may use yellow plastic tape marked "CAUTION" to identify hazardous locations where caution is needed. Using yellow plastic tape does not prevent employees from entering an area, but does warn them of a hazardous condition.